

1. A disposable diaper having a core that comprises a composite comprising:

superabsorbent polymer; and

5 a high loft nonwoven web impregnated with said superabsorbent polymer,

said superabsorbent polymer having been formed in situ,

10 said composite comprising from 10 % by weight to about 90 % by weight superabsorbent polymer.

15 2. The disposable diaper of claim 1, wherein said composite comprises at least 50 % by weight superabsorbent polymer.

20 3. The disposable diaper of claim 1, wherein said composite comprises at least 60 % by weight superabsorbent polymer.

25 4. The disposable diaper of claim 1, wherein said composite comprises at least 70 % by weight superabsorbent polymer.

5. The disposable diaper of claim 1, wherein said composite comprises at least 80 % by weight superabsorbent polymer.

25 6. The disposable diaper of claim 1, wherein said nonwoven web has a basis weight of greater than 22 g/m².

7. The disposable diaper of claim 1, wherein said nonwoven web has a basis weight from about 25 g/m² to less than 300 g/m².

30 8. The disposable diaper of claim 1, wherein said nonwoven web has a basis weight of at least 55 g/m².

9. The disposable diaper of claim 1, wherein said nonwoven web has a basis weight of at least 90 g/m².

10. The disposable diaper of claim 1, wherein said nonwoven web has a basis weight of at least 100 g/m².

5 11. The disposable diaper of claim 1, wherein said nonwoven web has a density less than 0.01 g/cm³.

12. The disposable diaper of claim 1, wherein said nonwoven web has a density less than 0.008 g/cm³.

10 13. The disposable diaper of claim 1, wherein said nonwoven web has a density from about 0.002 g/cm³ to about 0.009 g/cm³

15 14. The disposable diaper of claim 1, wherein said nonwoven web has a density from about 0.007 g/cm³ to about 0.009 g/cm³.

15 15. The disposable diaper of claim 1, wherein said composite exhibits a saline absorption capacity under a load of 0.3 psi of at least 10 g 0.9 % saline/g composite.

20 16. The disposable diaper of claim 1, wherein said composite exhibits a saline absorption capacity under a load of 0.3 psi of at least 15 g 0.9 % saline/g composite.

25 17. The disposable diaper of claim 1, wherein said composite exhibits a saline absorption capacity under a 0.3 psi load of at least 20 g 0.9 % saline/g composite.

30 18. The disposable diaper of claim 1, wherein said composite exhibits a water absorption capacity of at least 20 g water/g composite.

19. The disposable diaper of claim 1, wherein said composite exhibits a water absorption capacity of at least 30 g water/g composite.

20. The disposable diaper of claim 1, wherein said composite exhibits a water absorption capacity of at least 40 g water/g composite.

21. The disposable diaper of claim 1, wherein said composite exhibits a 5 dry tensile strength of at least 2000 g/25.4 mm.

22. The disposable diaper of claim 1, wherein said composite exhibits a dry tensile strength of at least 2500 g/25.4 mm.

10 23. The disposable diaper of claim 1, wherein said composite exhibits a wet tensile strength of at least 150 g/25.4 mm.

15 24. The disposable diaper of claim 1, wherein said composite exhibits a wet tensile strength of at least 400 g/25.4 mm.

20 25. The disposable diaper of claim 1, wherein said composite exhibits a wet tensile strength of at least 450 g/25.4 mm.

26. The disposable diaper of claim 1 further comprising a top sheet, an 20 acquisition layer, a cellulose fiber layer, an impermeable layer or a combination thereof.

27. The disposable diaper of claim 1, wherein said core further comprises cellulose fibers, said disposable diaper further comprising an acquisition layer, said 25 cellulose fibers being disposed between said acquisition layer and said composite.

28. The disposable diaper of claim 1 further comprising an acquisition 30 layer and an impermeable layer, said core being disposed between said acquisition layer and said impermeable layer.

29. The disposable diaper of claim 1 further comprising a second nonwoven web and an acquisition layer, said acquisition layer being disposed between said core and said second nonwoven web.

30. The disposable diaper of claim 1, wherein said superabsorbent polymer comprises the reaction product of

5 a polymer derived from an α - β -ethylenically unsaturated carboxylic acid monomer, said polymer comprising neutralized carboxylic acid groups, and

a crosslinking agent.

31. The disposable diaper of claim 30, wherein said α - β -ethylenically unsaturated carboxylic acid is selected from the group consisting of methacrylic acid, 10 crotonic acid, maleic acid, maleic acid anhydride, itaconic acid, fumaric acid, and mixtures thereof.

15 32. The disposable diaper of claim 30, wherein said polymer comprises polyacrylic acid.

33. The disposable diaper of claim 1, wherein said superabsorbent polymer remains disposed within the matrix of the high loft web when contacted with an aqueous composition.

20 34. The disposable diaper of claim 1, wherein said core further comprises cellulose fibers, said composite being disposed in regions on said cellulose fibers.

25 35. The disposable diaper of claim 1, wherein said core comprises a plurality of strips of said composite.

36. An absorbent article having a core that comprises a composite comprising:

superabsorbent polymer; and

a high loft nonwoven web impregnated with said

30 superabsorbent polymer,

said superabsorbent polymer having been formed in situ,

said composite comprising from 10 % by weight to about 90 %

by weight superabsorbent polymer.

37. An article according to the absorbent article of claim 36 selected from the group consisting of feminine napkins, incontinence pads and mattress pads.

5 38. An absorbent article having a core that comprises a composite comprising:

superabsorbent polymer; and
a nonwoven web impregnated with said superabsorbent polymer, said nonwoven web having loft and a density of no greater
10 than 0.025 g/m³,
said superabsorbent polymer having been formed in situ,
said composite comprising from 10 % by weight to about 90 % by weight superabsorbent polymer.

15 39. The absorbent article of claim 38, wherein said nonwoven web has a density no greater than 0.023 g/m³.

20 40. A composite comprising:
superabsorbent polymer; and
a high loft nonwoven web impregnated with said superabsorbent polymer, said superabsorbent polymer having been formed in situ,
said composite comprising from 10 % by weight to about 90 % by weight superabsorbent polymer.

25 41. A method of making an absorbent article comprising
impregnating a high loft nonwoven web with an aqueous composition comprising a superabsorbent polymer precursor and a crosslinking agent;
drying said composition to form a composite comprising from 10 % by weight to about 90 % by weight superabsorbent polymer; and
30 incorporating said composite in an absorbent article.